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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/805,184	NAMIZUKA, YOSHIYUKI	
	Examiner	Art Unit	
	IRIANA CRUZ	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 22-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 22-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks page 14, lines 3-20, filed in 11/05/2008, with respect to the rejection(s) of claim(s) 1-8 and 22-24, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

2. Applicant's arguments filed in 11/05/2008, with respect to claim 19 have been fully considered but they are not persuasive. Applicant argues that nowhere in Feng'898 is disclosed the steps of converting a data format of the image data such that the outputting of the image data is performed in a same manner regardless of whether the image data is color data or monochrome image data. Examiner disagrees.

Feng'898 in his patent talks about a system that gets an input of a document/image by for example scanning/copying and converts the image data to a chosen format to be used in a desired destination/output. Different formats support different types of documents, Feng'898 mention some examples of types of documents and formats for each, giving examples for black and white ((monochrome)) and color images ((See Column 1, Lines 6-13 and 14-40)). Feng'898 does teach converting documents/image to a chosen/needed format so the output of the image is performed regardless of whether the image data is color data or monochrome image data.

3. This action is made Non-final.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333) and further in view of Kurozasa (US Patent Number 6278526 B1).

Regarding **Claim 1**, Shimizu'701 shows a shows an image reproduction apparatus including an image copying function for reproducing input image data including image data obtained by reading a document, and for outputting the reproduced image data **(i.e., a copy machine copies the image information from an original and outputs the information, the apparatus includes the whole system. See Paragraphs 4 and 7)**, the image reproduction apparatus comprising: extension control means to which a controller board is connectable to add one or more optional units to realize one or more extension functions **(i.e., extension connector to connect an extension board. See Paragraphs 44 and 49)**, the extension control means allowing operation control in the one or more extension functions to be performed in a same manner as in the image copying function, and allowing image data to be input/output in the extension functions in a same format as in the image copying function **(i.e., the bus**

controller controls transfers of data ((input/output)) from the external devices like the scanner, printer and other extension connections in the same manner, arbitration of upon occurrence of bus connection and control of data transfer. See Paragraphs 42-45 and 19 also See Figure 3, elements 50, 49,34); operation control means for controlling operation of the image reproduction apparatus in a similar manner, regardless of whether the operation is associated with the image copying function or the one or more extension functions provided by the extension control means **(i.e., the operations controller, controls the scanner, printer and external function from the external board. See Paragraphs 42-45, 49 and 57-60)**; resource sharing means for allowing a resource used in the image copying function to also be used by the extension control means in inputting and/or outputting image data **(i.e., the paper is found on the paper unit and when any of the functions use paper the all use the paper from the same place. See Paragraphs 28, 44 and 49 also See Figure 1 and 2)**; image input means for reading an image of the document and outputting image data of the document image **(i.e., the input the scanner and the host computer connected to the apparatus. See Figure 1 and 2)**; and image input/output control means for controlling inputting/outputting of image data depending on an output characteristic of image data output from the image input means such that the image input means inputs/outputs image data in the same form **(i.e., input/output Controller section. See Paragraph 42-45 and 49-50, also See Figure 1 numeral 110)**.

Shimizu'701 fails to specifically show the controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions.

Takahashi'333 teaches extension control means with a controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions **(i.e., control operation for function expansion, a facsimile function can be added as an function expansion through an expansion panel ((controller board)) when using the function expansion the resources like the process sequence using the scanner for input can be used/controlled/actuated/arbitrated in common whether the copying or the expansion function, in this case the facsimile function are used. See Column 1, Lines 33-55 and 61-67, See Column 3, Lines 5-25 and 40-57 and See Column 4, Lines 5-25)**.

Having the system of Shimizu'701 and then given the well-established teaching of the Takahashi'333, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Shimizu'701 with the teachings of Takahashi'333 by adding extension control means with a controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions in order to improve the systems efficiency and capability to add more external functions and still use the main system resources for any extension added.

The combination of Shimizu'701 and Takahashi'333 fails to show an image reproduction apparatus including image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function.

Kurozasa'526 teaches an image apparatus including image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function **(i.e., the image apparatus includes an image quality correction unit in the image processing system that includes an image forming apparatus with plurality of image forming operation modes where the image quality correction unit is used for. See Column 1, Lines 48-60 and See Column 7, Lines 4-19)**.

Having the system of Shimizu'701 and Takahashi'333 and then given the well-established teaching of the Kurozasa'526, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Shimizu'701 and Takahashi'333 with the teachings of Kurozasa'526, by adding image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function in order to improve the systems efficiency by implementing the image quality correction unit as one of the resources to be shared by the apparatus and its extensions for better image quality.

6. **Claims 2, 4-5 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333), further in view of Kurozasa (US Patent Number 6278526 B1) and further in view of Murata et al. (US Patent Number 6278513 B1).

Regarding **Claim 2**, the combination of Shimizu'701, Takahashi'333 and Kurozasa'526 fails to show an image reproduction apparatus, further comprising: line decimation control means for converting the resolution of the image data; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation.

Murata'513 teaches an image reproduction apparatus, further comprising: line decimation control means for converting the resolution of the image data **(i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67 and See Column 4, 3-31 and 42-51)**; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation **(i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47)**.

Having the system of Shimizu'701, Takahashi'333 and Kurozasa'526 and then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Takahashi'333 and Kurozasa'526 as taught by the Murata'513 by adding an image reproduction apparatus, further

comprising: line decimation control means for converting the resolution of the image data; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation, since using line thinning means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10.

Regarding **Claim 4**, Shimizu'701,Takahashi'333 , Kurozasa'526 and Murata'513 shows a image reproduction apparatus wherein the line decimation control means divides a control signal specifying a reading line into a plurality of control signals and divides a single functional module into a plurality of functions **(i.e., there is a plurality of modes/functions where the CPU functions as the decimation means by reducing the image data in size. See Column 1, Lines 49-60 and Column 10, Lines 60-65 in reference Kurozasa'526)**, thereby controlling a density conversion **(i.e., the control signal is used to perform density conversion. See Column 4, Lines 40-50 in reference Kurozasa'526)**.

Regarding **Claim 5**, the combination of Shimizu'701,Takahashi'333 , Kurozasa'526 and Murata'513 shows an image reproduction apparatus wherein the image input means is one of a contact image sensor and a charge coupled device **(i.e., an image sensor or CCD that stands for charged coupled device. See Column 4, Lines 35-37 in reference Kurozasa'526)**.

Regarding **Claim 7**, the combination of Shimizu'701, Takahashi'333 and Kurozasa'526 and Murata'513 shows a image reproduction apparatus wherein the line decimation control means performs decimation in an optimum manner

(i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67 and See Column 4, 3-31 and 42-51 in reference Murata'513); and the pixel loss compensation means performs compensation in an optimum manner depending on whether image data is color image data or monochrome image data **(i.e., the type of image ((color or monochrome)) will decide how optimum is going to be the decimation depending on the image the mode is chosen. See Column 1, Lines 49-60 in reference Kurozasa'526)**.

7. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333), further in view of Kurozasa (US Patent Number 6278526 B1) and further in view of Feng et al. (US Patent Number 7,312,898 B2).

Regarding **Claim 3**, the combination of Shimizu'701, Takahashi'333 and Kurozasa'526 (although suggests transmitting and receiving image data to and from the extension control means) fails to show an image reproduction apparatus comprising data format conversion means for converting a data format of image data such that transmission and reception of image data to and from the extension control means is performed in a same manner, regardless of whether the image data is color image data or monochrome image data.

Feng'898 teaches an image reproduction apparatus comprising data format conversion means for converting a data format of image data such that transmission and reception of image data to and from the extension control

means is performed in a same manner, regardless of whether the image data is color image data or monochrome image data **(i.e., format conversion means that converts the data to the chosen/desired format and rout the desired destination/output. See Column 1, Lines 6-13).**

Having the system of Shimizu'701, Takahashi'333 and Kurozasa'526 and then given the well established teaching of the Feng'898, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Takahashi'333 and Kurozasa'526 as taught by the Feng'898 by adding an image reproduction apparatus comprising data format conversion means for converting a data format of image data such that transmission and reception of image data to and from the extension control means is performed in a same manner, regardless of whether the image data is color image data or monochrome image data, in order to improve the system since using format conversion means allows the image reproduction apparatus support a variety of document types and communication protocols as suggested in reference Feng'898 Column 1, Lines 11-12.

8. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333), further in view of Kurozasa (US Patent Number 6278526 B1) and further in view of Nishij et al. (European Patent Application EP0926622 A2).

Regarding **Claim 6**, the combination of Shimizu'701, Takahashi'333 and Kurozasa'526 fails to show an image reproduction apparatus comprising:

sequential line discrimination/control means for, when color image data is input using a contact image sensor as the image input means, detecting the color of image data currently being transmitted and processed and for controlling a reading of a plurality of data lines at a time on a color-by-color basis.

Nishij'622 teaches an image reproduction apparatus comprising: sequential line discrimination/control means for, when color image data is input using a contact image sensor as the image input means, detecting the color of image data currently being transmitted and processed and for controlling a reading of a plurality of data lines at a time on a color-by-color basis **(i.e., the process can be equally done for color image and monochrome image. See Column 5, Lines 50)**.

Having the system of Shimizu'701, Takahashi'333 and Kurozasa'526 and then given the well-established teaching of the Nishij'622, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Takahashi'333 and Kurozasa'526 as taught by the Nishij'622 by adding the image reproduction apparatus to comprise: sequential line discrimination/control means for, when color image data is input using a contact image sensor as the image input means, detecting the color of image data currently being transmitted and processed and for controlling a reading of a plurality of data lines at a time on a color-by-color basis, in order to apply the process to color images helps improving the system to be more versatile and efficient.

9. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333), further in view of Kurozasa (US Patent Number 6278526 B1) and further in view of Murata et al. (US Patent Number 6278513 B1) in view of Yoshiyuki (JP Publication Number 2000-196881).

Regarding **Claim 8**, Shimizu'701 shows a shows an image reproduction apparatus including an image copying function for reproducing input image data including image data obtained by reading a document, and for outputting the reproduced image data **(i.e., a copy machine copies the image information from an original and outputs the information, the apparatus includes the whole system. See Paragraphs 4 and 7)**, the image reproduction apparatus comprising: extension control means to which a controller board is connectable to add one or more optional units to realize one or more extension functions **(i.e., extension connector to connect an extension board. See Paragraphs 44 and 49)**, the extension control means allowing operation control in the one or more extension functions to be performed in a same manner as in the image copying function, and allowing image data to be input/output in the extension functions in a same format as in the image copying function **(i.e., the bus controller controls transfers of data ((input/output)) from the external devices like the scanner, printer and other extension connections in the same manner, arbitration of upon occurrence of bus connection and control of data transfer. See Paragraphs 42-45 and 19 also See Figure 3, elements 50, 49,34)**; operation control means for controlling operation of the

image reproduction apparatus in a similar manner, regardless of whether the operation is associated with the image copying function or the one or more extension functions provided by the extension control means **(i.e., the operations controller, controls the scanner, printer and external function from the external board. See Paragraphs 42-45, 49 and 57-60)**; resource sharing means for allowing a resource used in the image copying function to also be used by the extension control means in inputting and/or outputting image data **(i.e., the paper is found on the paper unit and when any of the functions use paper the all use the paper from the same place. See Paragraphs 28, 44 and 49 also See Figure 1 and 2)**.

Shimizu'701 fails to specifically show the controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions.

Takahashi'333 teaches extension control means with a controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions **(i.e., control operation for function expansion, a facsimile function can be added as an function expansion through an expansion panel ((controller board)) when using the function expansion the resources like the process sequence using the scanner for input can be used/controlled/actuated/arbitrated in common whether the copying or the expansion function, in this case the facsimile function are used. See Column 1, Lines 33-55 and 61-67, See Column 3, Lines 5-25 and 40-57 and See Column 4, Lines 5-25)**.

Having the system of Shimizu'701 and then given the well-established teaching of the Takahashi'333, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Shimizu'701 with the teachings of Takahashi'333 by adding extension control means with a controller board including a system controller and an arbiter that arbitrates use of resources shared by the one or more extension functions in order to improve the systems efficiency and capability to add more external functions and still use the main system resources for any extension added.

The combination of Shimizu'701 and Takahashi'333 fails to show an image reproduction apparatus including image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function.

Kurozasa'526 teaches an image apparatus including image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function **(i.e., the image apparatus includes an image quality correction unit in the image processing system that includes an image forming apparatus with plurality of image forming operation modes where the image quality correction unit is used for. See Column 1, Lines 48-60 and See Column 7, Lines 4-19)**.

Having the system of Shimizu'701 and Takahashi'333 and then given the well-established teaching of the Kurozasa'526, it would have been obvious to one

having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Shimizu'701 and Takahashi'333 with the teachings of Kurozasa'526, by adding image quality retaining means for retaining a quality of an image reproduced via the extension control means at a level similar to that of an image produced by the image copying function in order to improve the systems efficiency by implementing the image quality correction unit as one of the resources to be shared by the apparatus and its extensions for better image quality.

The combination of Shimizu'701, Takahashi'333 and Kurozasa'526 fails to show the apparatus including a line decimation control means for converting resolution of the image data; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation.

Murata'513 teaches an image reproduction apparatus, further comprising: line decimation control means for converting the resolution of the image data **(i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67 and See Column 4, 3-31 and 42-51)**; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation **(i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47)**.

Having the system of Shimizu'701, Takahashi'333 and Kurozasa'526 and then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time of the invention was

made to modify the system of Shimizu'701, Takahashi'333 and Kurozasa'526 as taught by the Murata'513 by adding an image reproduction apparatus, further comprising: line decimation control means for converting the resolution of the image data; and pixel loss compensation means for compensating for a loss of pixel information caused by line decimation, since using line thinning means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10.

The combination of Shimizu'701, Takahashi'333, Kurozasa'526, and Murata'513 fails to show the apparatus including invalid pixel detection means for detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder; streak image correction means for correcting the streak image; and warning means for warning of an occurrence of the invalid pixel.

Yoshiyuki'881 teaches an invalid pixel detection means for detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder, prior to reading the image using the sheet-through document feeder **(i.e., before reading the image using the sheet-through document feeder inaccurate/invalid pixels are detected. See Paragraphs 3, 6-8 and 48-55)**; streak image correction means for correcting the streak image **(i.e., the invalid pixels can cause black stripes ((streak image)) and this black stripes are amended/corrected. See Paragraphs 48-55)**; and warning means

for warning of an occurrence of the invalid pixel **(i.e., when invalid pixels or black stripes/garbage are detected a warning is made. See Paragraphs 54)**.

Having the system of Shimizu'701, Takahashi'333, Kuroza'526 and Murata'513 and then given the well-established teaching of the Yoshiyuki'881, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Shimizu'701, Takahashi'333, Kuroza'526 and Murata'513 with the teachings of Yoshiyuki'881 by adding invalid pixel detections means, streak image correction means and warning means, in order to improve the systems efficiency, accuracy and error detections.

10. **Claims 9-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US Publication Number 2003/0137701 A1) in view of Takahashi et al. (US Patent Number 5881333), further in view of Kurozasa (US Patent Number 6278526 B1), further in view of Murata et al. (US Patent Number 6278513 B1), further in view of Yoshiyuki (JP Publication Number 2000-196881) and further in view of Nishij et al. (European Patent Application EP0926622 A2).

Regarding **Claim 9**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513 and Yoshiyuki'881shows an image reproduction apparatus further comprising: history recording means for recording a history of the occurrence of the invalid pixel detected by the invalid pixel detection means **(i.e., the invalid pixels detections are saved in the memory. See Paragraphs 49-52)**.

The combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513 and Yoshiyuki'881 fails to show blank document page detection means for detecting a blank document page; blank document page warning means for determining whether a read document page is blank based on the history of invalid pixel occurrence recorded by the history recording means and a result of detection made by the blank document page detection means, and warning, if the read document page is determined to be blank, that the read document is blank; and reading job control means for controlling an output of a document read in a reading job in accordance with a result of the determination made by the blank document page warning means.

Nishij'622 teaches blank document page detection means for detecting a blank document page **(i.e., a blank/empty page is detected. See Column 2, Lines 42-47)**; blank document page warning means for determining whether a read document page is blank based on the history of invalid pixel occurrence recorded by the history recording means and a result of detection made by the blank document page detection means, and warning, if the read document page is determined to be blank, that the read document is blank **(i.e., a trial mode method is used to show the blank pages detections and save them in memory, this trial mode is a warning to the user about blank pages detected. See Column 2, Lines 15-47)**; and reading job control means for controlling an output of a document read in a reading job in accordance with a result of the determination made by the blank document page warning means **(i.e., graphic data detector/reader controls the recording medium**

depending the data found. See Column 3, Lines 45-50 and See Column 8, Lines 35-40 and 45-50).

Having the system of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513 and Yoshiyuki'881and then given the well-established teaching of the Nishij'622, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513 and Yoshiyuki'881 as taught by the Nishij'622 by adding blank document page detection means for detecting a blank document page; blank document page warning means for determining whether a read document page is blank based on the history of invalid pixel occurrence recorded by the history recording means and a result of detection made by the blank document page detection means, and warning, if the read document page is determined to be blank, that the read document is blank; and reading job control means for controlling an output of a document read in a reading job in accordance with a result of the determination made by the blank document page warning means, in order to improve the systems efficiency and its accuracy since using a blank page detector does not permit to print blank pages that can be another type of invalid pixel found as suggested in reference Nishij'622 Column 2, Lines 45-46.

Regarding **Claim 10**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows a image reproduction apparatus wherein the invalid pixel detection means reads a background plate of the sheet-through document feeder and detects sizes of

invalid pixels and a total number of invalid pixels **(i.e., the invalid pixels detections are saved in the memory and the size of the detected invalid pixels can be known. See Paragraphs 43, 49-52 in reference Yoshiyuki'881)**.

Regarding **Claim 11**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows a image reproduction apparatus wherein the invalid pixel detection means manages the history of occurrence of detected invalid pixels and records the history as invalid pixel occurrence information on detection result recording means **(i.e., the invalid pixels detections are saved in the memory. See Paragraphs 49-52 in reference Yoshiyuki'881)**.

Regarding **Claim 12**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows a image reproduction apparatus wherein the blank document page detection means detects a blank document page by dividing one page of the read document image into a plurality of blocks, detects a total number of invalid pixels and a number of invalid pixels at successive locations in each block, and calculates sums of the numbers over all blocks **(i.e., the invalid pixels detections can be detected by blocks. See Paragraphs 43-44 and 49-52 in reference Yoshiyuki'881).**

Regarding **Claim 13**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows a image reproduction apparatus wherein the blank document page detection means detects a blank document page by dividing one page of the read document

image into a plurality of blocks, detects a total number of invalid pixels and a number of invalid pixels at successive locations in each block **(i.e., the invalid pixels detections can be detected by blocks. See Paragraphs 43-44 and 49-52 in reference Yoshiyuki'881),** calculates sums of the numbers over all blocks, determines from the calculated sums a streak image that is predicted to occur, subtracts a streak image component caused by successively located invalid pixels from the document image data, thereby predicting a real state of the document, and determines from the predicted real state whether the document page is a blank document page or a document page including a streak image **(i.e., prediction formulas are used. See Paragraphs 33-34 and 56-66 in reference Yoshiyuki'881).**

Regarding **Claim 14**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows an image reproduction apparatus wherein the blank document page detection means manages information indicating whether document pages read in the reading job are blank, in units of document pages, and records the information as blank document page detection information on detection result recording means **(i.e., blank page detector detects blank pages in documents. See Column 2, Lines 40-50 See Figure 2 in reference Nishij'622)**.

Regarding **Claim 15**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows an image reproduction apparatus wherein the detection result recording means includes a

nonvolatile storage means **(i.e., RAM element 203. See Figure 6 in reference Kurozasa'526)**.

Regarding **Claim 16**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows an image reproduction apparatus comprising display means for displaying results of detection made by the invalid pixel detection means and the blank document page detection means **(i.e., the trial mode display a minimize version of the documents to be processed so the user can verify them to see if there is any errors/strikes or blank pages. See Column 2, Lines 34-45 in reference Nishij'622)**.

Regarding **Claim 17**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows an image reproduction apparatus comprising image output means for outputting, on paper, results of detection made by the invalid pixel detection means and the blank document page detection means **(i.e., the user checks error/strikes/blank pages and decides if they should be printed giving a paper record of them. See Column 2, Lines 34-45 and See Column 3, Lines 45-55 in reference Nishij'622)**.

Regarding **Claim 18**, the combination of Shimizu'701, Takahashi'333, Kuroza'526, Murata'513, Yoshiyuki'881 and Nishij'622 shows an image reproduction apparatus, wherein results of detection made by the invalid pixel detection means and the blank document page detection means are transmitted to an external apparatus via communication means connected to the extension

control means **(i.e., control operation for function expansion, a facsimile function can be added as an function expansion through an expansion panel ((controller board)) when using the function expansion the resources like the process sequence using the scanner for input can be used/controlled/actuated/arbitrated in common whether the copying or the expansion function, in this case the facsimile function are used. See Column 1, Lines 33-55 and 61-67, See Column 3, Lines 5-25 and 40-57 and See Column 4, Lines 5-25 in reference Takahashi'333)**.

11. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Feng et al. (US Patent Number 7,312,898 B2) and further Yoshiyuki (JP Publication Number 2000-196881).

Regarding **Claim 19**, Feng'333 shows an image reproduction method of reproducing input image data such as that obtained by reading a document and outputting the reproduced image data **(i.e., a scanner copies/reads a document sends it to a desired destination/output. See Column 1, Lines 6-13 and 14-40 See Column 2, Lines 27-35)**, the method comprising: controlling inputting/outputting of image data depending on an output characteristic of image data output from image input means such that the image input means is allowed to input/output image data in a same form **(i.e., the I/O is controlled so that the documents are converted to a desired format ((format as a characteristic)) that can be used for the desired destination/output. See Column 1, Lines 5-40)**; and converting a data format of the image data such that outputting of the

image data is performed in a same manner regardless of whether data is color image data or monochrome image data **(i.e., format conversion means that converts the data to the chosen/desired format and routes to the desired destination/output. See Column 1, Lines 6-40)**.

Feng'333 fails to show the method detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder, prior to reading the image using the sheet-through document feeder.

Yoshiyuki'881 teaches a method detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder, prior to reading the image using the sheet-through document feeder **(i.e., before reading the image using the sheet-through document feeder inaccurate/invalid pixels are detected; the invalid pixels can cause black stripes ((streak image)). See Paragraphs 3, 6-8 and 48-55)**.

Having the system of Feng'333 and then given the well-established teaching of the Yoshiyuki'881, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Feng'333 with the teachings of Yoshiyuki'881 by adding the method detecting an invalid pixel that causes a streak image in an image read using a sheet-through document feeder, prior to reading the image using the sheet-through document feeder, in order to improve the systems versatility and efficiency by allowing the system to detect streak images by invalid pixels.

12. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Feng et al. (US Patent Number 7,312,898 B2), in further view Yoshiyuki (JP Publication Number 2000-196881) and in further view of Murata et al. (US Patent Number 6,278,513 B1).

Regarding **Claim 20**, the combination of Feng'333 and Yoshiyuki'881 fails to show image reproduction method further comprising: converting a resolution of the image data; and compensating for a loss of pixel information caused by line decimation.

Murata'513 teaches an image reproduction apparatus comprising converting a resolution of the image data **(i.e., the line thinning/decimation means reduces the lines resolution of the image. See Column 3, Lines 64-67);** and compensating for a loss of pixel information caused by line decimation **(i.e., interpolation between lines means avoids degradation of resolution of the quality of images. See Column 3, Lines 42-47).**

Having the system of Feng'333 and Yoshiyuki'881 and then given the well-established teaching of the Murata'513, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Feng'333 and Yoshiyuki'881 with the teachings of Murata'513 by adding converting a resolution of the image data and compensating for a loss of pixel information caused by line decimation, in order to improve the systems quality, since using line thinning means is a simpler structure and it eliminates the necessity of raising the secondary scanning speed

to process the resolution as suggested in reference Murata'513 Column 4, Lines 4-10

13. **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiyuki'881 (JP Publication Number 2000-196881) and in further view Fukuda et al. (US Publication Number 2003/0090742 A1).

Regarding **Claim 22**, Yoshiyuki'881 shows an image reproduction method comprising: reading an image **(i.e., a copier that reads by a sheet through document feeder. See Paragraphs 3)**; detecting an invalid pixel from the image read in the reading step **(i.e., detecting an abnormal/inaccurate/invalid pixel when reading ((it detects the black strike formed by invalid pixels)). See Paragraphs 56)**; detecting a maximum width of invalid pixels detected in the step of detecting the invalid pixel **(i.e., invalid pixels width is known and can be amended. See Paragraphs 58-64)** and predicting an occurrence of a streak image in a document image from results of detection made in the step of detecting the maximum width, the step of detecting the invalid pixels **(i.e., means to preset a value for stripe detection depending on the first mode invalid pixels found. See Paragraphs 8,11, 36 and 77)** and correcting the streak image, based on a result of the prediction made in the predicting step **(i.e., amending/correcting the strake image. See Paragraphs 8 and 77)**.

Yoshiyuki'881 (although it shows correcting the streak image by using prediction of the invalid pixels) fails to show an image reproduction method comprising detecting a number of invalid pixels detected in the step of detecting the invalid pixel; detecting allocation, on a document, of each invalid pixel

detected in the step of detecting the invalid pixel; and correcting the streak image in the document image depending on the number of invalid pixels and the step of detecting the location of each invalid pixel.

Fukuda'742 teaches an image reproduction method comprising detecting a number of invalid pixels detected in the step of detecting the invalid pixel **(i.e., the abnormal pixel detector detects the abnormal pixels form a plurality of lines in the image data read, consider or the pixels. See Paragraphs 12-15,19-21 and 102)**; detecting allocation, on a document, of each invalid pixel detected in the step of detecting the invalid pixel **(i.e., detects the position of the abnormal pixels. See Abstract and See Paragraphs 11-12 and 17)**; and correcting the streak image in the document image depending the number of invalid pixels and the step of detecting the location of each invalid pixel **(i.e., correcting the abnormal pixel part, the abnormal pixel detection knows the locations of the abnormal pixels to then correct them. See Paragraphs 12)**.

Having the system of Yoshiyuki'881 and then given the well-established teaching of the Fukuda'742, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Yoshiyuki'881 with the teachings of Fukuda'742 by adding image reproduction method comprising detecting a number of invalid pixels detected in the step of detecting the invalid pixel; detecting allocation, on a document, of each invalid pixel detected in the step of detecting the invalid pixel; and correcting the streak image in the document image depending on the number of invalid pixels and the step of detecting the location of each invalid

pixel, in order to improve the systems accuracy by detecting the total number of invalid pixels and their exact position and use that information to predict where the strike image will be in order to correct it.

14. **Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al. (US Publication Number 2003/0090742 A1) and in further in view of Knowlton (US Patent Number 5548664).

Regarding **Claim 23**, Fukuda'742 shows a image reproduction method, comprising: reading an image **(i.e., scanning apparatus. See Paragraph 11)**; dividing the image into blocks with a predetermined block size **(i.e., an image scanning apparatus divides an image in a plurality of blocks, an image is divides in pixels each pixel represent a block. See Paragraphs 7, 11-12)**; detecting a total number of invalid pixels and a number of invalid pixels at successive locations in each block produced in the dividing step **(i.e., the image is read from a plurality of lines where the pixels are found, this pixels ((considering each as a block)) each successes each other where the abnormal pixels are found in succession when detecting them ((pixels in a range/area can all be candidates to be abnormal pixels)). See Paragraphs 12-15,19-21 and 102)**; and calculating a sum of the numbers detected for respective blocks in the step of detecting the total number of valid pixels **(i.e., it would be obvious that the summing of the abnormal pixels will describe the strike image because successive abnormal pixels are found when the reading is done and the abnormal pixels together will describe the strikes**

image. Correction of strike image is done by averaging of the surrounding. See Paragraphs 7, 11-15, 102-104, 118 and 123).

Fukuda'742 fails to show using the image reproduction method to detect a blank document page.

Knowlton'664 teaches image reproduction method to detect a blank document page **(i.e., detection of blank page is done by partitioning a page into a plurality of arrays of pixels each array seen as a bounding box, a count/sum of occurrences values in the box will determine if the page is blank. See Column 1, Lines 26-28, 45-50 and 60-67 and See Column 2, Lines 1-19 and See Column 7, Lines 20-24)**.

Having the system of Fukuda'742 and then given the well-established teaching of the Knowlton'664, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Fukuda'742 with the teachings of Knowlton'664 by adding image reproduction method to detect a blank document page, in order to improve the systems efficiency by allowing the system to not only detect strike images but also detect blank pages which could avoid expending any system resources to further handle or process this blank page.

With regards to method **Claim 24**, the limitation of the claim 24 are corrected by limitation of claims 19, 22 and 23 above. The steps of claim 24 read into the function step of claims 19, 22 and 23.

With regards to method **Claim 25**, the limitation of the claim 25 are corrected by limitation of claim 1 above. The steps of claim 25 read into the function step of claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRIANA CRUZ whose telephone number is (571)270-3246. The examiner can normally be reached on Monday-Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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